Installation / Machine Start-up

3

Section 3

describes the exact routines necessary to start the machine operation. Before putting the machine in operation you should be familiar with the information of section 2 (controls and connectors).

Section 3

Table of Contents

1 Requirements for Installation

1.1 General

- **Preconditions**
  finished preinstallation
  the digitizer is at its installation site
- **Remark**

  You have to distinguish between an integration into an independent, pure ADC Solo Network (1digitizer, 1 Processing station, 1 Preview/ID station) and an integration into an existing network. When integrating the digitizer into an existing network, it is necessary to create a CPF– file **beforehand** (see section 14, Installation Planning, checklist). With a pure ADC Solo Network the shipment configuration can be used.

1.2 Required Service Programs

The following Software has to be installed on:

- your Service PC or
- the PC of the ID / Preview -Station.

1.2.1 CCM-Tool

The CCM - Tools is available at the BBS (Forum ADCOMP:DISK1 -> DISK4) and – in future – on the Diginet.

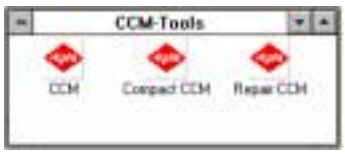
The CCM - Tools is needed to :

- create and modify the configuration file (adc.cpf) for the ADC SOLO

If there is already a previous version installed on your Service PC, please remove the complete directory as well as the icons.

Installation: install by executing "setup.exe"

The CCM Tool will be installed in directory "IMOS" or any directory of your choice.



- For detailed information on the installation of CCM – tools see **ADC Compact, Technical Documentation, DD+DIS014.98E, section 3.**

1.2.2 Error message program

The "SHOW ERROR PROGRAM" with the "ERROR.MSG file" translates the ADC SOLO error codes into clear text.

The "SHOW ERROR PROGRAM" is a part of IMOS, the "ERROR.MSG file" is loaded in the Digitizer.

1.3 Preparations for the installation

The following work should be performed **before** the system components are installed:

- Laying of the network cables (Ethernet).

- **Creation and Adaptation of the configuration file adc.cpf, together with the application specialist.**

  We recommend, to create and adapt the configuration file adc.cpf, which is used by all ADC SOLO Components, before starting the installation. This allows you a smooth installation.

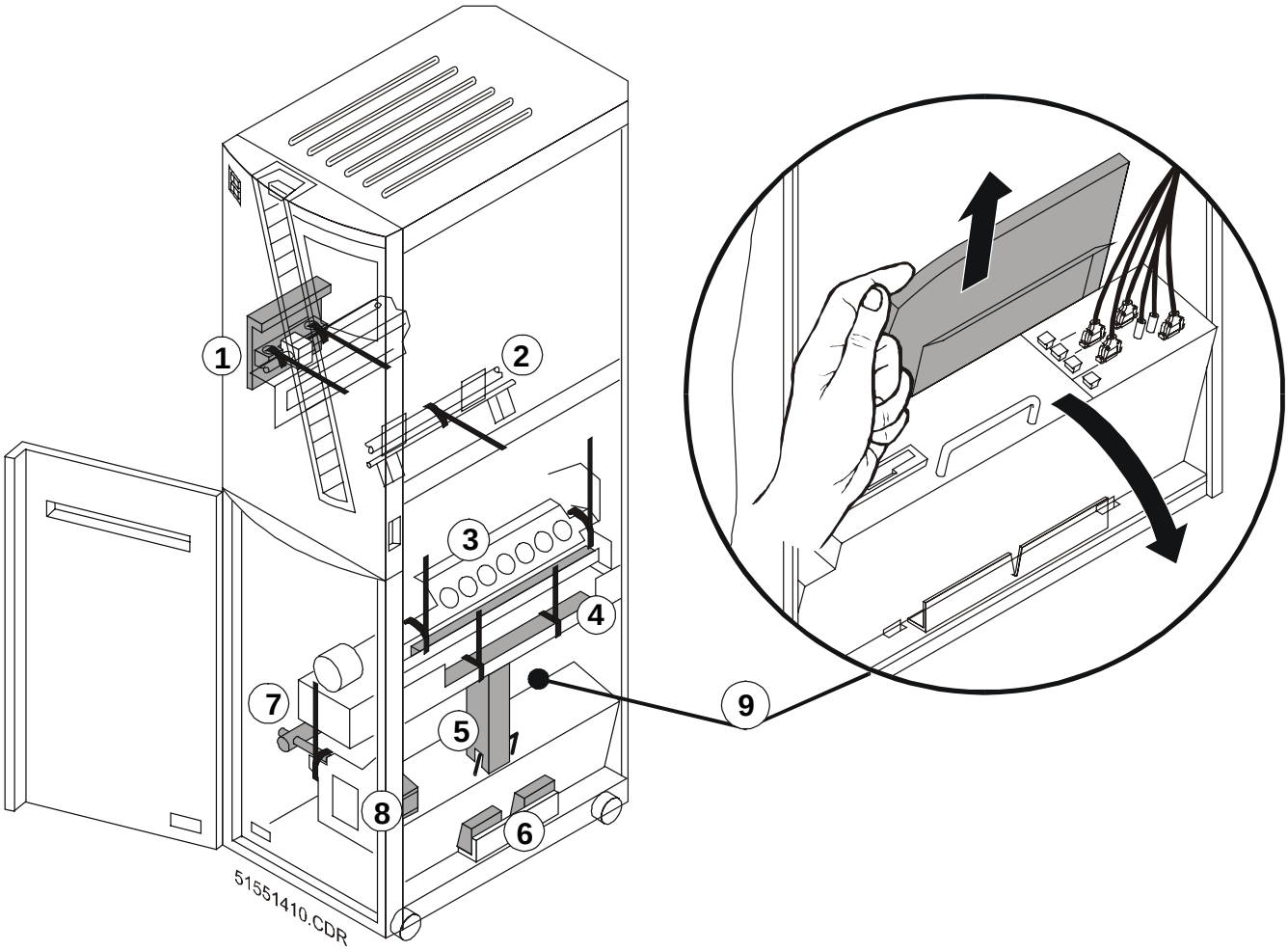
  For detailed information on the adaptation see:

  ADC Compact, Technical Documentation, DD+DIS014.98E, section 3.

2 Installing the ADC SOLO Digitizer

2.1 Removing the Transport Safeguards

- Remove all cushioning parts and transport safeguards **prior** to first operation



Cut and remove all cable ties (7 pieces; red) attached to the transport safeguards **1-4** and **7**.

The following numbers refer to the numbering of the above figure.

① Swing the metal safeguard forward and remove it.

② No further measures required.

③ Lift the foam strip and remove it.

④ Lift the foam strip and remove it.

⑤ Swing the foam block aside and remove it.

⑥ Lift and remove the two foam wedges

⑦ Turn the metal bar upwards approx. 45 ° and pull it out.

⑧ Remove the foam block from the disk holder.

⑨ Swing out the VME – Rack.
Remove the foam part.

The foam part is hidden behind the VME – rack and <u>can not be seen</u> from outside !

2.2 Electric connection

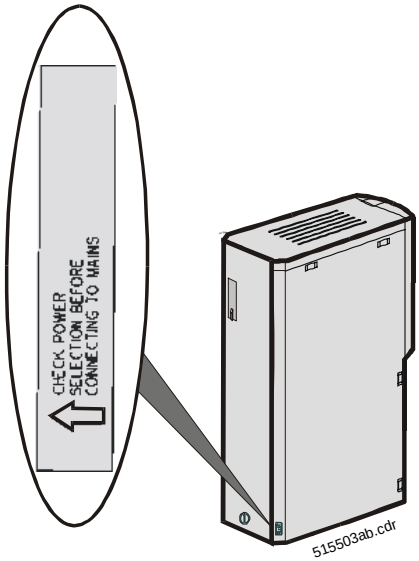
2.2.1 Voltage adjustment

- The machine is always delivered with 230 V set ex factory.
- If required, adapt the voltage on the voltage adaptation switch at the rear of the machine (100V, 120V, 230-240V; see figure beside).

2.2.2 Connecting the mains cable

Note: ADC Solo comes with UL and VDE mains cables.

- Remove the yellow sticker from the mains socket of the machine only after having checked the voltage adjustment.
  (see figure beside).
- Connect the mains cable to the machine and to the power supply.



2.3 Start-up of the digitizer

Important: The Digitizer must not be connected to a network during the start-up process.

- Switch on the digitizer.
- Check the operation terminal during the initialization.
  While booting for the first time, the message **"Installation not yet confirmed"** appears.
  Confirm with ✓.
  After a successful start-up **"ready"** appears.
- Check/adjust **date** and **time** in key operator mode.
- Choose **terminal language** in the service menu **"Configure – User terminal language".**
- Store the modified machine-specific data.
- Open the service menu **"Maintenance – test cycle without scan"** and check the function of cassette- and plate operation with the machine open. Each size should run at least one time.
- Erase all image plates.
- End of the mechanical part of start-up.

2.3.1 Integrating the digitizer into an independent, pure ADC Solo network

A pure ADC Solo network consists of:

- 1 digitizer
- 1 Processing station
- 1 Preview/ID station

In this case the ex factory settings for the ip- address (adcs1 192.9.200.199) are being used. A new configuration of the machine **is not** required.

Measures:

- Switch off the digitizer
- Connect ADC Solo to the Ethernet
- Switch on the digitizer

⇨ The digitizer is now integrated to the network. Proceed with 2.3.3

2.3.2 Integrating the digitizer into an existing network

In this case the ip-address has to be adapted to the existing network. This happens by means of the CPF – file created beforehand.

Measures:

- Load the adapted configuration file"adc.cpf":
  - insert the disk with the configuration file
  - select **<Install from floppy>**
    <CPF-File>
- Choose a name suggested on the LCD
- Store the modified machine-specific data
- Switch off the digitizer
- Connect ADC Solo to the Ethernet
- Switch on the digitizer

⇨ The digitizer is now integrated to the network

2.3.3 System Integration

Precondition
The destinations, i.e. Processing stations, intended for the digitizer, have to be put into operation and must be obtainable via Ethernet.

Measures:

- Check whether the Processing station(s) is/are obtainable.
  Service menu: **"Checks – Check destinations"**
- Send a test image to the Processing station(s)
  Key operator menu **"Send test image"**
- Check the function of the emergency buttons.As a precondition the emergency buttons must have been programmed via CPF. Standard CPF includes entries about the emergency buttons. If a new CPF has been created ,corresponding entries have to be present.

⇨ End of system integration

2.4 Make a backup of the machine specific data

- insert an existing backup floppy or a new formatted floppy
- start the service program
- select ***<save on floppy>***
  <Machine specific data>
- start the backup procedure
- label the floppy as follows:

S/N: <xxxx> Date: <date> Software-version: SOL_xxxx

	**A new backup is not compatible with older software!**

3 Concluding installation

3.1 Check the technical image quality of the complete system

The harddisk of the digitizer contains three samples showing the minimal required image quality (2x flatfield, 1x testsheet).

One Testsheet for quality comparison and two Flatfields (Banding, Calibration) can be sent to a printer via Service-Menu

<**CHECKS**>

<**SEND FLATFIELD**>

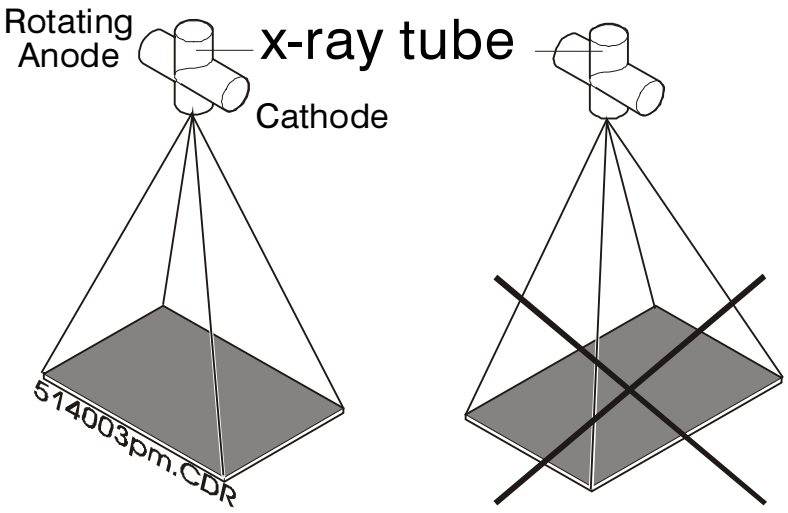
<**SEND TESTSHEET**>

Compare the samples with the images created by yourself.

3.1.1 Exposure and evaluation of a flatfield

- Expose a grey field (flatfield) and evaluate the image on the processing station and the Laser printer.
  Criteria: homogenous field, stripes a.s.o.

- **Have a new plate of every format exposed twice as follows:**



Note:

For exposure place the cassette in length direction to the X-ray tube see figure above.

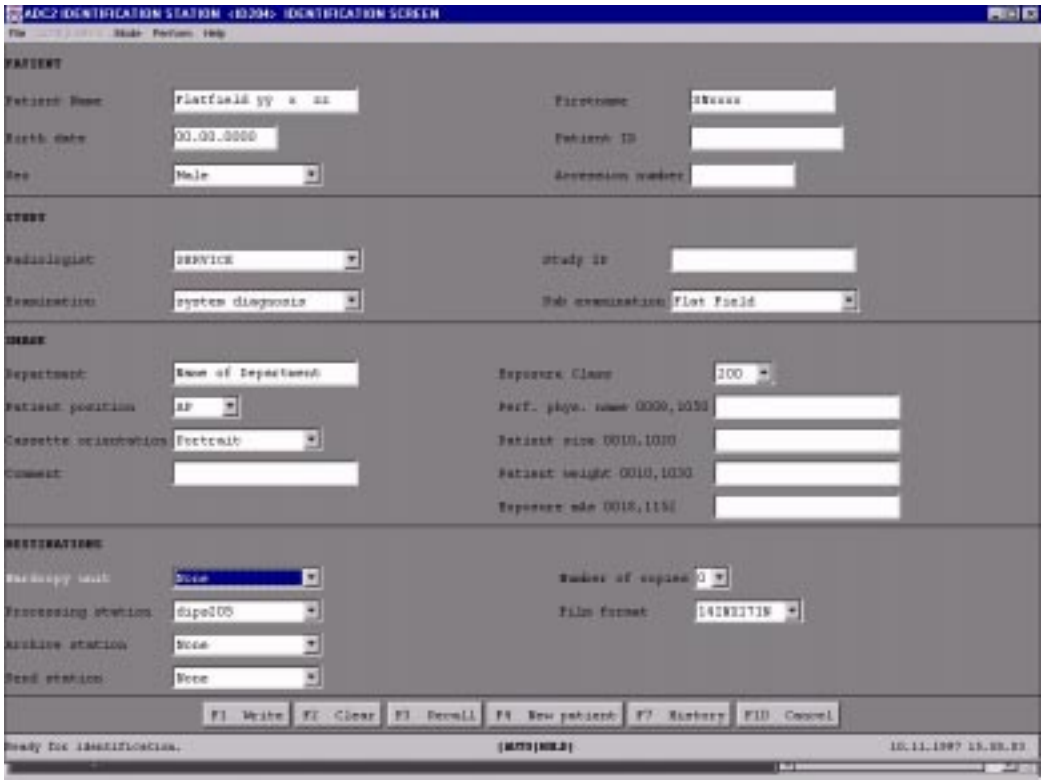
- 1st exposure: Doses:

  20 mAs-77kV-1.3 m distance,1.5 mm Cu filter

- Turn cassette through 180°.

- 2nd exposure: parameters as in 1st exposure

- Identify the cassette on the ID Station as follows:



  - select in the field Examination: <**system diagnosis**>
  - select in the field Sub-examination:<**Flat field**>
  - confirm the Exposure class: <**200**>

- Insert the cassette into the DIGITIZER. Print the image on a printer with a window setting of 0.6 without changing the level setting via Processing station

- Check plates for running askew with a test sheet.

3.1.2 Exposure and evaluation of a test sheet

- One Testsheet for quality comparison can be sent to a printer via Service-Menu

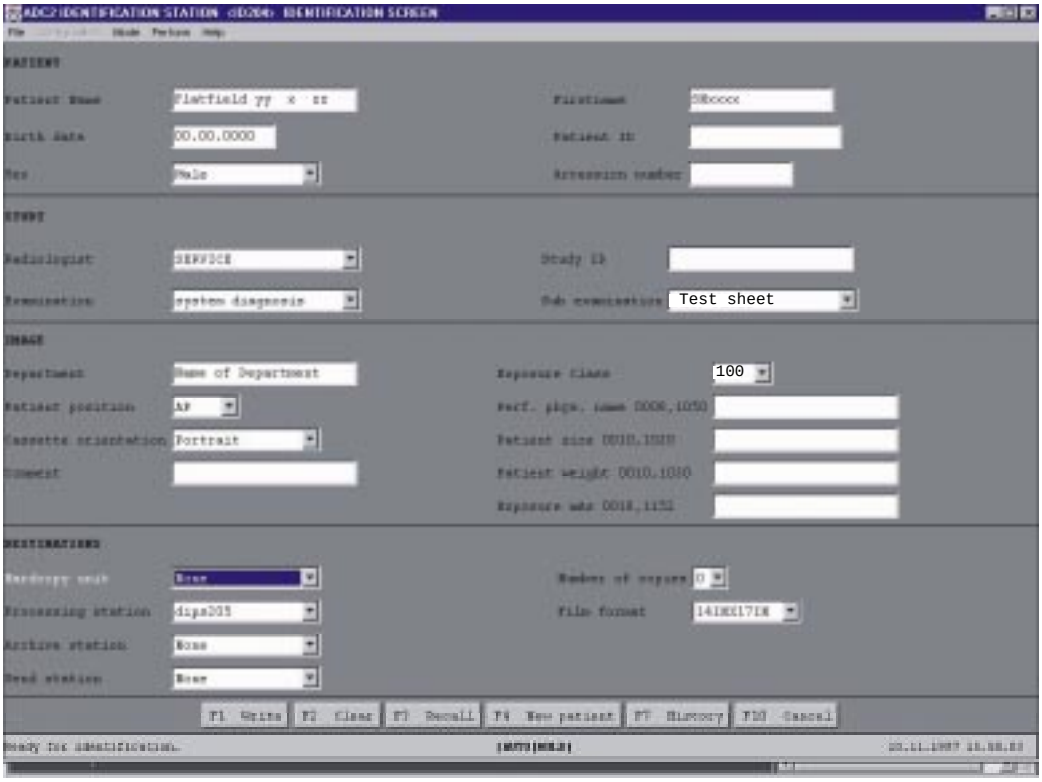
  <**CHECKS**>

  <**SEND TESTSHEET**>

- Print the testsheets via Processing station (window 0.6).
- Insert a test sheet (CM+7.8966.1235.0) into the cassette and expose with the following parameters:

  10 mAs - 77 kV - approx. 1,3m distance .

- Identify the cassette as follows on the ID station:



  - select in the field Examination: <**system diagnosis**>
  - select in the field Sub-examination:<**IDP Testsheet**>
  - confirm the Exposure class: <**100**>
- Insert the cassette into the DIGITIZER. Print the image on a printer with a window setting of 0.6 without changing the level setting via Processing station
- Evaluate the developed images as follows.
- Compare the prints of the samples with your testsheets on a lightbox.
  The quality of your own testsheet has to reach at least the quality of the samples.

After having finished the test, it is strongly recommended to delete the test sheets on the hard disk of the **workstation**.

- Proceed according to the subsequent evaluation criteria:

Evaluation criteria

Banding: fine white or grey lines in fast-scan direction

Aim: No lines visible or effect revealed less than on sample

Quality less than sample: Contact Support center

NOTE: fine white or grey lines can also appear, if there is dust on the scanner - use the scan-brush for cleaning the scanner.

Calibration: dark lines or stripes in slowscan direction

Aim: No lines visible or effect revealed less than on sample

Quality less than sample: Check / adjust the position of the laser beam via the fibre optics Expose a new flatfield and compare it with the sample.

Quality still less than sample: New calibration - Expose a new flatfield and compare it with the sample.

Quality still less than sample: Contact Support center

Testsheet (Jitter effect): straight vertical lines occur frayed on the test sheet.

Aim: proper straight lines without jitter

Quality less than sample: Check *"4.7 Galvanometer Monitoring"* (see table below) Check, whether the values of the galvo-monitoring are beyond tolerance. Change galvo.

Infocounter:

```
. . .
4.7 Galvanometer Monitoring
Maximum peak-to-peak offset counts: 30, amplitude counts: 60
Date           Time          Cycles    Offset Amplitude
12-Feb-1999    11:29:15           3        37        62
01-Jan-1970     0:00:00           0         0         0
01-Jan-1970     0:00:00           0         0         0
. . .
```

3.2 Last steps

- Dispose of all packing material for the different system components (depending on the country, by the forwarding agent or by the hospital).
- Complete the Installation Report (Enclose of every device) for all system components and forward it to the regional CSO Manager.
- Fill in the enclosed form "Site and System Data" and send it to MED CSO, if not done yet.
- Hand over the ADC system to the application specialist.

4 Installing the system components

For detailed information on the installation of system components see:

ADC Compact, Technical Documentation, DD+DIS14.98E, section 3.